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EXAMINER	
DAILEY, THOMAS J	
ART UNIT	**PAPER NUMBER**
2152	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/659,942	SHAPIRO ET AL.	
	Examiner	Art Unit	
	Thomas J. Dailey	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/10/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-24 are pending in this application.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The language of claims raises a question as to whether the claims are directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a useful, concrete and tangible result to form the basis of Statutory subject matter under 35 U.S.C. 101. The claims simply recite an algorithm that selects a routing path, selection of a path only does not constitute a tangible result.

4. Claims 4, 6, and 8, are additionally rejected under 35 U.S.C.101 because the claimed invention is directed to non-statutory subject matter. As provided on page 3, line 25 to page 4, line 5, of the specification, a computer readable medium includes transmission media. Claims drawn to components involving signals encoded with functional descriptive material do not fall within any of the

categories of statutory subject matter as set forth in 35 U.S.C. 101, and are therefore, ineligible for protection.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 3 and 5-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 3, recites, "paths other than the identified path are selected as the current paths for network traffic **from the first identifier to the multiple identifiers** other than the second identifier" (lines 7-10). It is unclear how there can be paths between two identifiers, and not the actual nodes they identify.

8. Claims 5-6 are rejected due to lack of antecedent basis for the following limitations, "said identifier" (claim 5, line 16; claim 6, line 17) and "the best path weight" (claim 5, line 16; claim 6, line 17).

9. Claims 5-6 are additionally rejected due to the ambiguousness of "the best path weight." The definition of "best" in this context is subjective and therefore the claim is rendered indefinite.

10. Claims 7-9, recite, "for each of multiple paths from **a first node identifier to a second node identifier**" (e.g. claim 7, lines 4-5). It is unclear how there can be paths between two identifiers, and not the actual nodes they identify.

11. Claims 10-13 are rejected due to their dependence on claim 9.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 9-10, 12, 18-19, 21 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Parham et al (US Pat. 6,879, 564), hereafter "Parham."

14. As to claim 9, Parham discloses a processor-implemented method of routing traffic in a subnet based on one or more selected characteristics, the method comprising:

for each of multiple paths from a first node identifier to a second node identifier, wherein the first node identifier identifies a first subnet node and the second node identifier identifies a second subnet node (Fig. 3c, several paths between server label 150 (first node) and server label 158 (second node), further any node on a network will inherently have an identifier in order for packets to be routed to it):

for each of multiple subnet components included in said path, identifying values for one or more characteristics of said component (column 4, lines 54-58 and Fig. 3c); and

aggregating the values for said one or more characteristics for the multiple subnet components to calculate a path weight for said path (column 4, lines 54-67); and

based on the path weights, selecting one of the multiple paths as the current path for subnet traffic from the first node identifier to the second node identifier (column 4, lines 54-67).

15. As to claim 18, it is rejected by the same rationale set forth in claim 9's rejection.

16. As to claims 10 and 21, Parham discloses each of the multiple subnet components comprises a communication link (column 4, lines 33-39); and a first characteristic of a subnet component comprises a link speed of the communication link (column 4, lines 33-39).

17. As to claims 12 and 23, Parham discloses a first characteristic of a subnet component comprises a cost associated with the subnet component (column 4, lines 54-67).

18. As to claim 19, Parham discloses the subnet components comprise one or more of: a network node (Abstract); and a link between two network nodes (Abstract).

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

20. Claims 1-6, 11, 13, 14-17, 22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parham et al (US Pat. 6,879, 564), hereafter "Parham," in view of Bertin et al (US Pat. 5,940,372), hereafter "Bertin."

21. As to claim 1, Parham discloses a processor-implemented method of routing network traffic through fault zones (Abstract), comprising:

identifying a path from a first network node to a second network node (Fig. 3c, the bold faced path (path) between the server with label 150 (first node) and the server with label 158 (second node));

identifying a set of fault zones through which the identified path passes (column 4, lines 54-58 and Fig. 3c);

for each fault zone in the set of fault zones, assigning a zone weight (column 4, lines 54-58);

calculating a path weight for the identified path, wherein said path weight is equal to the sums of said zone weights for each fault zone included in the identified path (column 4, lines 54-67); and

selecting the identified path as the current path for network traffic from the first node to the second node (column 4, lines 54-67).

But, Parham does not disclose that the zone weight is the number of paths from the first network node to the second network node that include said fault zone. Parham discloses where the zone weight is related to cost but nothing is explicitly recited that cost is a function of the number of paths between the two nodes that includes the fault zone.

However, Bertin discloses zone weights based upon the number of established routing paths between two nodes (column 6, lines 22-35, the paths (zones) with more traffic and more reserved bandwidth will inherently have more established routing paths).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Parham and Bertin in order to use a weighted routing algorithm that takes into load balancing so as to avoid an uneven distribution of network traffic.

22. As to claim 4, it is rejected by the same rationale set forth in claim 1's rejection.

23. As to claim 5, Parham discloses a processor-implemented method of determining routing between nodes in a subnet (Abstract), comprising:

identifying multiple fault zones in the subnet, each fault zone comprising one or more components of the subnet (column 4, lines 54-67 and Fig. 3c where the links read on the fault zones and the graph reads on the subnet);

configuring a central subnet manager to manage routing between nodes in the subnet (Abstract);

identifying a set of paths from a first node having a first identifier to a second node having multiple identifiers, including a second identifier, wherein traffic is

deliverable to the second node using any of the multiple identifiers (column 4, lines 54-67 and Fig. 3c, label 150 (first node) and label 158 (second node));

for each fault zone traversed by one or more of the paths, establishing a zone weight (column 4, lines 54-67);

for each path in the set of paths, establishing a path weight from the sums of the zone weights for each fault zone traversed by said path (column 4, lines 54-67); and

for each of the multiple identifiers of the second node, selecting as the current path from the first identifier to said identifier, from said set of paths, the path having the best path weight (column 4, lines 54-67).

But, Parham does not disclose that the zone weight is based upon the number of paths from the first network node to the second network node that include said fault zone. Parham discloses where the zone weight is related to cost but nothing is explicitly recited that cost is a function of the number of paths between the two nodes that includes the fault zone.

However, Bertin discloses zone weights based upon the number of established routing paths between two nodes (column 6, lines 22-35, the paths (zones) with more traffic and more reserved bandwidth will inherently have more established routing paths).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Parham and Bertin in order to use a weighted routing algorithm that takes into load balancing so as to avoid an uneven distribution of network traffic.

24. As to claim 6 and 14, they are rejected by the same rationale set forth in claim 5's rejection.

25. As to claim 2, Parham and Bertin disclose the invention substantially with regard to the parent claim 1, and further disclose:

identifying a new path from the first network node to the second network node (Parham, column 4, lines 54-65);

assigning zone weights to each fault zone in the new path (Parham, Fig. 3c);

calculating a new path weight for the new path (Parham, column 4, lines 54-65); and

if the new path weight is lower than said path weight for the identified path, selecting the new path as the current path for network traffic from the first node to the second node (Parham, column 4, lines 54-65).

26. As to claim 3, Parham and Bertin disclose the invention substantially with regard to the parent claim 1, and further disclose:

the first network node is identified by a first identifier (Parham, column 4, lines 54-65 and Fig. 3c, label 150, will inherently have an identifier);

the second network node is identified by multiple identifiers, including a second identifier (Parham, column 4, lines 54-65 and Fig. 3c, label 158);

selecting the identified path as the current path for network traffic from the first node to the second node comprises selecting the identified path the current path for network traffic from the first identifier to the second identifier (Parham, column 4, lines 54-65 and Fig. 3c, label 158); and

paths other than the identified path are selected as the current paths for network traffic from the first identifier to the multiple identifiers other than the second identifier (Parham, column 4, lines 54-65 and Fig. 3c).

27. As to claims 11 and 22, Parham discloses the invention substantially with regard to the parent claims 9 and 18, but does not disclose a first characteristic of a subnet component comprises a hop count between the first subnet node and the subnet component. Rather, the generic term "cost" is associated with the subnet components and Parham does not teach that components contain hop count data.

However, Bertin discloses a first characteristic of a subnet component comprises a hop count between the first subnet node and the subnet component (column 6, lines 43-46).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Parham and Bertin in order to more specifically define what cost data consists of and therefore allow more efficient management of the routing network traffic.

28. As to claims 13 and 24, Parham discloses the invention substantially with regard to the parent claims 9 and 18, but does not disclose a first characteristic of a subnet component comprises a quality of service offered by the subnet component. Rather, the generic term "cost" is associated with the subnet components and Parham does not teach that components contain quality of service data.

However, Bertin discloses a first characteristic of a subnet component comprises a quality of service offered by the subnet component (column 11, lines 25-37).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Parham and Bertin in order to more specifically define what cost data consists of and therefore allow more efficient management of the routing network traffic.

29. As to claim 15, Parham and Bertin disclose the invention substantially with regard to the parent claim 14, and further disclose the client computing device further comprises: a memory configured to store path weights of current paths between multiple pairs of node identifiers (Parham, column 3, lines 40-47 and as the weights are used in calculations in column 4, lines 54-65, they will inherently be stored in this memory).

30. As to claim 16, Parham and Bertin disclose the invention substantially with regard to the parent claim 15, and further disclose the memory is further configured to store, in association with each of the current paths, zone weights for fault zones traversed by the current path (Parham, column 4, lines 54-65).

31. As to claim 17, Parham and Bertin disclose the invention substantially with regard to the parent claim 14, and further disclose the subnet manager is further configured to disseminate routing information to a plurality of nodes in the subnet, said routing information including said current path from the first identifier to the second identifier (Parham, column 5, lines 1-8).

32. Claims 7-8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parham in view of Bradley et al (US Pat. 7,082,463), hereafter "Bradley."

33. As to claim 7, Parham discloses a processor-implemented method of routing traffic in a subnet based on cost data of components within the network, the method comprising:

for each of multiple paths from a first node identifier to a second node identifier, wherein the first node identifier identifies a first subnet node and the second node identifier identifies a second subnet node (Fig. 3c, several paths between server label 150 (first node) and server label 158 (second node), further any node on a network will inherently have an identifier in order for packets to be routed to it):

for each of multiple subnet components included in said path, identifying cost data of said component (column 4, lines 54-58 and Fig. 3c); and

aggregating the cost data for the multiple subnet components to calculate a path weight for said path (column 4, lines 54-67); and

based on the path weights, selecting one of the multiple paths as the current path for subnet traffic from the first node identifier to the second node identifier (column 4, lines 54-67).

But, Parham does not disclose that the cost data is calculating and evaluating using a mean time between failure (MTBF) for each component.

However, Bradley discloses where paths possess MTBF data and it is well known in the art that MTBF data will have a direct correlation with associated costs for the paths (column 12, lines 62-65).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Parham and Bradley in order to more specifically define what cost data consists of and therefore allow more efficient management of the routing network traffic.

34. As to claim 8, it is rejected by the same rationale set forth in claim 7's rejection.

35. As to claim 20, Parham discloses the invention substantially with regard to the parent claim 18, but does not disclose a first characteristic of a subnet component comprises a mean time between failures (MTBF) of the subnet component. Rather, the generic term "cost" is associated with the subnet components and Parham does not teach that components contain any mean time between failure data.

However, Bradley discloses where subnet components possess MTBF data and it is well known in the art that MTBF data will have a direct correlation with associated costs for the paths (column 12, lines 62-65).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Parham and Bradley in order to more specifically define what cost data consists of and therefore allow more efficient management of the routing network traffic.

Conclusion

36. For additional prior art made of record and not relied upon and considered pertinent to applicant's disclosure see attached Notice of References Cited, Form PTO-892.

37. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Dailey whose telephone number is 571-270-1246. The examiner can normally be reached on Monday thru Friday; 9:00am - 5:00pm.

38. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

39. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TJD
4/23/2007

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SUPERVISORY PATENT EXAMINER